



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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July 25, 2011

Ms. Amy Henry
TVA NEPA Compliance
Tennessee Valley Authority
400 West Summit Hill Drive, WT 11D
Knoxville, TN 37902

Subject: EPA NEPA Review Comments on TVA's FSEIS for "Sequoyah Nuclear Plant Units 1 and 2 License Renewal"; Hamilton County, TN; CEQ #20 100432; ERP #TVA-A06008-TN

Dear Ms. Henry:

The U.S. Environmental Protection Agency (EPA) reviewed the Final Supplemental Environmental Impact Statement (FSEIS) for the Sequoyah (SQN) Nuclear Plant, Units 1 and 2 License Renewal, situated on Chickamauga Reservoir in Hamilton County, Tennessee, near the city of Soddy-Daisy, pursuant to Section 102(2)(C) of the National Environmental Policy Act (NEPA), and Section 309 of the Clean Air Act. We appreciate your responses to our comments regarding the Draft Supplemental EIS (DSEIS), which were included in Appendix D of this FSEIS. The purpose of this letter is to inform you of the results of our review.

TVA proposes to submit an application to renew the operating licenses for Sequoyah Nuclear Plant (SQN), Units 1 and 2, in Hamilton County, Tennessee. License renewal would permit operation for an additional 20 years past the current operating license terms that expire in 2020 for Unit 1 and in 2021 for Unit 2. License renewal would involve continuation of normal operations, maintenance, and refueling. The license renewal program would not require major new construction, alterations, or refurbishment to SQN to maintain consistency with the current licensing basis. The purposes of the proposed action are to (1) obtain extended licenses to operate SQN Units 1 and 2 to help meet the identified need for power between 2020 and 2031; (2) maximize use of existing assets; and (3) support TVA's efforts to reduce the carbon emissions of its generating system.

In addition to continuing to operate SQN, TVA evaluated alternative methods for supplying electrical power. Relative to SQN, the No Action Alternative would involve ceasing operation of SQN when the current operating licenses expire, and using other methods to provide necessary capacity and energy. TVA examined various supply-side and demand-side options, including

some that require construction of new generation facilities. Feasible alternatives evaluated in more detail are construction of a new nuclear plant or a new natural gas-fired plant.

EPA has concentrated its review on TVA's responses to our written comments on the Draft Supplemental Environmental Impact Statements (DSEISs) for the license renewal for Units 1 and 2, referenced EPA Memo dated, December 10, 2010, Subject: EPA NEPA Review Comments on TVA's DSEIS for "Sequoyah Nuclear Plant Units 1 and 2 License Renewal"; Hamilton County, TN; CEQ #20 100432; ERP #TVA-A06008-TN. These comments and responses are located within the FSEIS, Appendix D. The responses are consistent with the DSEIS comments, and the additional modifications were made in the text of the FSEIS. We appreciate the effort in responding to the comments. EPA offers the following comments on the FSEIS:

Section 3.18.2.1 Spent Fuel Storage, alternative 1 should address how the Fukushima Task force Report would likely influence the regulatory revisions by the NRC, relative to moving spent fuel from pool to casks sooner may impact the date for construction of an additional storage pad.

EPA's comments on the Final SEIS in light of NRC's Fukushima Task Force Report

While EPA believes that U.S. reactors are routinely operated with the most stringent safety protocols/procedures and it is very improbable that a similar series of coincident events could lead to a Fukushima type accident/crisis here in the U.S., EPA nevertheless strongly believes that improving nuclear power plant safety should be a continual and dynamic effort. EPA was, therefore, greatly encouraged by the NRC's recent publication known as the "Recommendations for Enhancing Reactor Safety in the 21st century: The Near Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident." EPA notes that this report proposes needed improvements in a variety of areas, including "loss of power" response, safety of spent fuel pools, and preparedness for natural events. We understand that the report has been presented to the NRC Commissioners, who after being formally briefed, will have the task force host a public meeting on July 28, 2011 on the report, and then have the task force members appear before the Advisory Committee on Reactor Safeguards on Aug. 17, 2011. EPA understands that additional meetings may be scheduled to seek public input on the recommendations, and that final action on the report's recommendations will then be up to the Commission.


The report states that there has unfortunately existed a historical "patchwork of regulatory requirements" that needs to be modernized with a more logical, systematic and coherent regulatory framework. The report was produced by NRC experts who collectively have over 130 years of reactor regulatory experience, and will be followed by a more in-depth report as additional information about the Fukushima reactors becomes available. EPA notes the following important findings in the report, and we ask that the Final SEIS address these recommendations as they may pertain to SQN Units 1 and 2.

1. Currently the NRC has requirements for protection and mitigation of "design-basis" events, requirements for some "beyond-design-basis" events through regulations, and voluntary "industry initiatives" to address severe accident issues. EPA concurs with the statement that "consistent with the NRC's organizational value of excellence, the Task Force believes that improving the NRC's regulatory framework is an appropriate, realistic and achievable goal."

2. Continued operation and continued licensing activities should not pose an imminent risk to public health and safety, the report added, and EPA believes this should be true at SQN Units 1 and 2 as well. The report notes the following, which TVA should consider applying to SQN Units 1 and 2:
- a. Requiring plants to reevaluate and upgrade as necessary their design-basis seismic and flooding protection of structures, systems and components for each operating reactor and reconfirm that design basis every 10 years.
 - b. Strengthening Station Black Out (SBO) mitigation capability for existing and new reactors for “design-basis” and “beyond-design-basis” natural events – such as floods, hurricanes, earthquakes, tornadoes or tsunamis – with a rule to set minimum coping time without offsite or onsite AC power at 8 hours; establishing equipment, procedures and training to keep the core and spent fuel pool cool at least 72 hours; and preplanning and pre-staging offsite resources to be delivered to the site to support uninterrupted core and pool cooling and coolant system and containment integrity as needed.
 - c. Requiring that facility emergency plans address prolonged station blackouts and events involving multiple reactors.
 - d. Requiring additional instrumentation and seismically protected systems to provide additional cooling water to spent fuel pools if necessary; and requiring at least one system of electrical power to operate spent fuel pool instrumentation and pumps at all times (the Task Force noted it will take some time for a full understanding of the sequence of events and condition of the spent fuel pools).
 - e. Strengthening and integrating onsite emergency response capabilities such as emergency operating procedures, severe accident management guidelines and extensive damage mitigation guidelines.

Thank you for your continuing coordination with us. Please send us a copy of the Record of Decision (ROD) when it becomes available. If you have any questions or need additional information, please contact Mr. Larry Gissentanna of my staff at (404) 562-8248.

Sincerely,



Heinz J. Mueller, Chief
NEPA Program Office
Office of Policy and Management